AUTOMATED LAMP FOCUS CONTROL FOR SLM-BASED ELECTRONIC PROJECTION SYSTEMS

ABSTRACT

Methods for measuring and automatically controlling the light distribution and overall brightness in electronic-based spatial light modulator projection display systems. One method takes a small fraction of the projected light from a partial turning mirror 407 in the projector's optics path and focuses this light on to a detector 420 for use in controlling the light distribution and brightness of the system. Another method uses an array of embedded light sensors 518-522 at chosen locations on the surface of a display screen 517 to control the light distribution and brightness parameters of the projection system. Both methods use a micro-controller, servomotors, and an adjustable power supply, controlled by the detector/sensor outputs, to maintain the desired light distribution and brightness in the projected image.